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WHAT IS CLAIMED IS:

1. A plant-growing apparatus comprising:
 - 5 (a) a plurality of rotatable plant-growing modules, each said module comprising a cylindrical structure for holding plant-growing containers, such that said plants grow in said containers radially inwardly of said cylindrical structure toward a light source inside said cylindrical structure and
 - 10 roots of said plants grow radially outwardly of said cylindrical structures;
 - (b) module support means for supporting each said module and for rotating each said module about its longitudinal axis in a
 - 15 substantially horizontal position;
 - (c) module moving means for conveying said module support means and modules along a path between two separated positions; and
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 - (d) water-feeding means for feeding water to said plants.
2. An apparatus according to claim 1 wherein said two separated
 - 25 positions are a vertically higher position and a vertically lower position.
3. An apparatus according to claim 1 wherein said two separated positions are two horizontally separated positions.
- 30 4. An apparatus according to claim 1 wherein said path forms a circuit extending between a plurality of positions that are both

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vertically and horizontally separated from each other, and said module moving means are adapted to convey each said module support means and module around said circuit.

- 5 5. An apparatus according to claim 4 wherein said circuit is a closed circuit and said module support means and modules can be conveyed in a revolution around said circuit.
- 10 6. An apparatus according to claim 1 wherein at least one said module of said plurality of modules is in a vertically higher position than at least one other of said modules of said plurality of modules.
- 15 7. An apparatus according to claim 1 wherein at least one said module of said plurality of modules is in a horizontally separated position from at least one other of said modules of said plurality of modules.
- 20 8. An apparatus according to any one preceding claim wherein said water feeding means comprises sprayers or injectors.
- 25 9. An apparatus according to any one of claims 1, 2, 4, 5 or 6 wherein said water feeding means is a trough in which said plant-growing containers are brought into contact with water at said vertically lower position.
- 30 10. An apparatus according to any one of claims 1 to 7 wherein said water feeding means is a trough supported on said module support means for watering said plants as said module rotates.

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11. An apparatus according to any preceding claim wherein said module moving means comprises a plurality of sprocket wheels and an endless chain.
- 5 12. An apparatus according to any preceding claim wherein said module support means comprises a pair of spaced-apart rotatable members.
- 10 13. An apparatus according to claim 12 wherein said cylindrical structures have rims adapted to engage said rotatable members.
14. A method of growing plants comprising the steps of:
 - 15 (a) placing plant material in a growing medium;
 - (b) placing said medium in a rotatable growing apparatus such that plants grow radially inwardly of said apparatus toward a light;
 - 20 (c) illuminating a light source in said rotatable growing apparatus;
 - (d) rotating said rotatable growing apparatus about said light source;
 - 25 (e) moving said rotatable growing apparatus along a path between two separated positions; and
 - (f) delivering water to said growing medium.

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15. A method according to claim 14 wherein said two separated positions are a vertically higher position and a vertically lower position.
- 5 16. A method according to claim 14 wherein said two separated positions are two horizontally separated positions.
17. A method according to claim 14 wherein said rotatable growing apparatus is moved around a circuit extending between a plurality
10 of positions that are both vertically and horizontally separated from each other.
18. A method according to claim 17 wherein said circuit is a closed
15 circuit and said rotatable growing apparatus is moved in a revolution around said circuit.
19. A plant-growing apparatus comprising:
 - 20 (a) a plurality of rotatable plant-growing modules, each said module comprising a cylindrical structure for holding plant-growing containers and a light source inside said cylindrical structure about which said cylindrical structure can rotate;
 - 25 (b) a pair of spaced-apart endless chains supported on sprocket wheels, each said chain defining a closed circuit extending between a vertically higher position and a vertically lower position;
 - 30 (c) drive means to rotate said sprocket wheels and drive said endless chains about said circuit;

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- (d) a plurality of support members extending between said pair of spaced-apart endless chains;
- 5 (e) a module support frame connected to each said support member for supporting one of said plant-growing modules, said module support frame including a pair of rotatable members;
- 10 (f) drive means to rotate one of said rotatable members and thereby rotate said plant growing module; and
- (g) a trough in which said plant-growing containers are brought into contact with water at said vertically lower position.